

AMENDMENTS TO THE CLAIMS

Claims 1-67 (Canceled).

68. (Currently Amended) A system comprising:

an in vivo sensor device comprising a plurality of structural elements defining the in-vivo sensor device, the plurality of structural elements being composed of a first material, the first material having at least one of a first transition temperature and a first transition coefficient, at least one region of the plurality of structural elements being composed of a second material, the second material having at least one of a second transition temperature and a second transition coefficient higher than the at least one of the first transition temperature and the first transition coefficient, the second material and the first material being selected so that ~~at least one of a geometry and a conformation of the in vivo sensor device~~ changes from a first geometry to a second geometry upon application of at least one of an internal force and an external force to the in vivo sensor device wherein the in vivo sensor device changes from the second geometry to the first geometry upon removal of at least one of the internal force and external force; and a detection mechanism configured to ~~measure~~ detect ~~the at least one of a geometry and conformation change of~~ a change in geometry of the in vivo sensor device.

69. (Previously Amended) The system of claim 68, wherein the first material comprises at least one of a shape memory material, a superelastic material, a plastically deformable material, an elastically deformable material, a stainless steel and a nickel-titanium alloy.

70. (Currently Amended) The system of claim 68, wherein the second material comprises at least one of a shape memory material and a superelastic material[[,]].

71. (Previously Amended) The system of claim 68, wherein the second material has a martensite transition temperature that is higher than a martensite transition temperature of the first material.

72. (Previously Presented) The system of claim 68, wherein the in vivo sensor is configured to measure at least one physiological condition.

73. (Previously Presented) The system of claim 72, wherein the physiological condition is fluid flow rate.

74. (Previously Presented) The sensor system of claim 72, wherein the physiological condition is temperature.

75. (Previously Presented) The sensor system of claim 72, wherein the physiological condition is plaque.

76. (Previously Presented) The sensor system of claim 72, wherein the physiological condition is an electrochemical change.